

# Oil Preheaters

## Types FPHB 3, 5 and 10

### General Data Sheet

For specific information on this product, please contact Danfoss Burner Components

#### Identification

The preheater is laser engraved with the following information:

Example:  
 FPHB 5                    Type  
 030N2058                Code no.  
 230 V                    Voltage  
 30-110 W                Power consumption  
 030128                    Date of manufacture

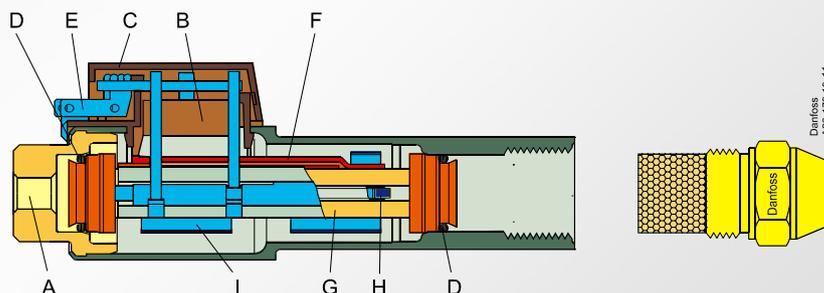
#### Design

- A Connection port
- B Thermostat
- C Cover
- D O-ring
- E Electrical connection
- F Heat conductor (not FPHB 3)
- G Heat exchanger
- H PTC element
- I Clamp

FPHB oil preheaters are designed for oil burners with capacity up to 12 kg/h using standard fuel oil with viscosity up to 10 cSt. The preheaters are available with different heating elements and thermostats for selection of release time and temperature.

#### Application and Features

- Standard types of gasoil with viscosity of max. 10 cSt. (at 20°C)
- Capacity up to 12 kg/h
- Max. temperature limitation
- Improved atomisation
- High average efficiency of the burner



#### Function

##### Cold start

When the boiler thermostat cuts-in, voltage is applied to the PTC heating element and the oil in the heat exchanger is heated until it reaches the cut-in temperature of the preheater thermostat (see below table). Now the burner performs a normal starting sequence.

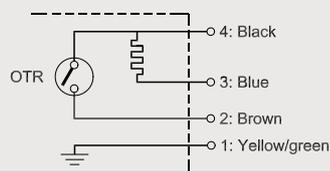
##### Operation

If the oil temperature is low and the flow rate is high, compared with the preheater capacity, the preheater thermostat might cut off during operation. To avoid this an oil burner control with holding function must be used.

##### Warm start

If the oil temperature in the preheater is higher than the cut-out temperature of the preheater thermostat, the burner starts immediately.

#### Electrical connection



OTR: Thermostat in oil preheater

#### Release times and temperatures

Type	PTC	Thermostat 60/32 and 60/45		Thermostat 73/60	
		Release time in seconds	Release temp. in outlet °C	Release time in seconds	Release temp. in outlet °C
FPHB 3	40	80	23	-	-
FPHB 5	50	129	44	-	-
	70	73	26	130	39
	120	49	25	78	37
FPHB 10	2 × 50	115	37	-	-
	2 × 70	89	35	125	60
	2 × 120	62	35	87	45

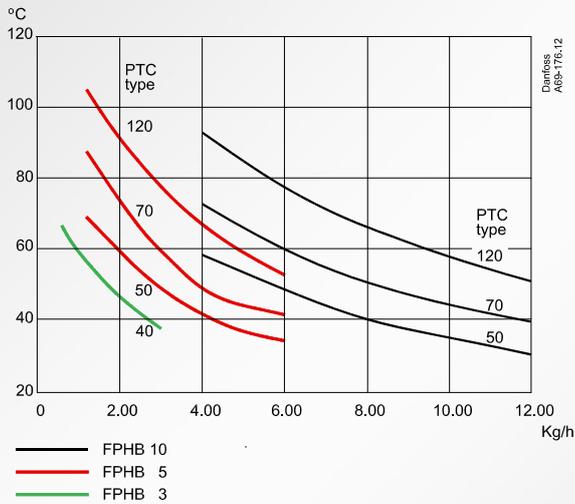
The figures given are measured average values on cold start and without blown air. Note that the PTC element continues to heat during prepurge.

## Technical Data

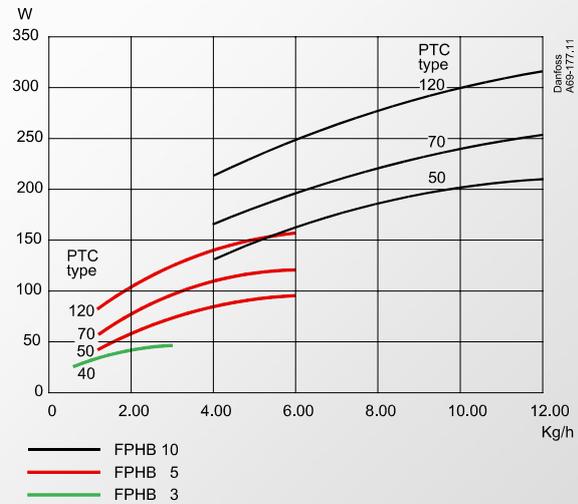
	FPHB 3	FPHB 5	FPHB 10
Nominal voltage <sup>*)</sup>	230 V, 50/60 Hz		
Contact load, thermostat	10 (3) A 250 V		
Max. permissible pressure	bar 30		
Capacity	kg/h max. 3	kg/h max. 6	kg/h max. 12
Max. ambient temperature	°C 105		
Storage temperature	°C -20 to +105		
Max. pressure drop	bar 0.05 at 3 kg/h	bar 0.1 at 5 kg/h	bar 0.4 at 10 kg/h
Recommended tightening torque	Nm 15 to 20		
Viscosity	max. 10 cSt. at 20°C		

\*) Working voltage: 100 to 265 V, 50-60 Hz

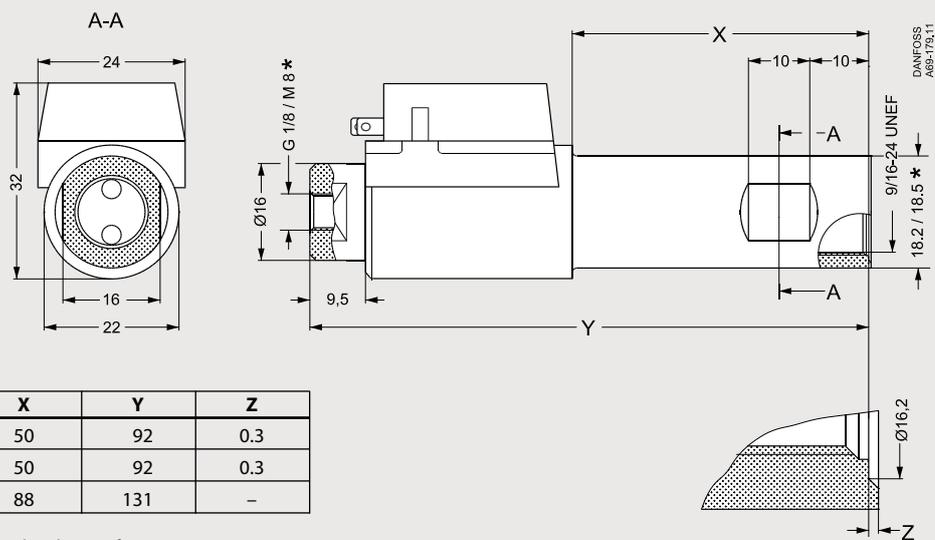
### Temperature/ Capacity



### Power consumption/ Capacity



## Dimensions



\*\* FPHB 10 has no recessed sealing surface

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